

Introduction

The purpose of this appendix is to document and compare existing water availability, quality, and usage in San Luis Obispo County. Key issues in water resources are identified, including the capacity of existing sources and transmission infrastructure and possible shortfalls in water supply now or in the future. Issues related to water quality and stormwater management are also discussed. The appendix also provides an overview of existing local, federal, and state regulation of water resources.

Setting

The history of California has long been shaped by water. The need for water to serve growing populations, productive farms and ranches, and other industries has led to intricate feats of water engineering and complicated laws and regulations governing this precious resource. Entering the new century, the need to refine current practices with regard to water has become apparent. At the state level, policymakers are looking to address emerging challenges, such as the potential reduction in storage capacity with diminishing Sierra snow pack and higher temperatures making surface storage facilities less desirable. The need to reduce water transmission distances is also gaining recognition on the statewide level, as the connection between water transmission, energy use, and land use is increasingly clear. With anticipated population growth statewide, all Californians are facing water supply crises, with Central Californians particularly at risk of losing existing water supply to seawater intrusion and the corresponding groundwater overdraft, sedimentation, and nitrate and heavy metal contamination. Having recently secured additional supply and storage and transmission capacity with the Nacimiento Water Project, San Luis Obispo County has taken steps to secure water for the immediate future. However, additional steps will be necessary in the long term—beyond the import of water from other regions. Moving toward a sustainable water future will require a change in the way San Luis Obispo County residents live and work alongside this resource.

Regulatory Framework

Regulation and management of water supply, quality, use, and associated resources occurs through a combination of federal, state, and local regulations, policies, and programs. The following overview of the regulatory framework identifies responsibilities and minimum requirements for key water resource issues. This summary provides an explanation of the context in which water resources are managed, beginning with local management regimes and expanding outward to encompass state and federal regulations.

LOCAL MANAGEMENT OF WATER RESOURCES***San Luis Obispo Flood Control and Water Conservation District***

The San Luis Obispo County Flood Control and Water Conservation District (District) was established in 1945 and is governed by the County's Board of Supervisors. The District's boundaries are coterminous with the county's. The District functions similar to a regional water management agency, engaged in water planning and implementation of specific projects and programs. The District holds the County's contract with the State Department of Water Resources for State Water Project service and owns major waterworks facilities such as the Lopez Water Project and the newly constructed Nacimiento Water Pipeline. District water planning is funded by general property tax allocations (sometimes augmented with grant funding), and projects and programs are funded by specific fees/assessments, charges, and/or special taxes when benefiting entities are in specific areas or participate via contracts.

San Luis Obispo County Division of Public Works

The County Department of Public Works (DPW) functions as staff to both the County and the District, and it oversees the administration and operation of water and wastewater wholesale facilities and long-term master water planning for the County. This includes the issuance of will-serves for water and sewer service for residents in County Service Areas (CSAs), which are specific unincorporated urban/rural residential areas in the county. Primary DPW water resources projects and programs include the Los Osos Wastewater Project, the Lopez Water Project, the Nacimiento Water Pipeline Project, the County's Stormwater Management Program, water quality monitoring, and water resources data collection and long-term planning.

San Luis Obispo County Water Resource Advisory Committee

The San Luis Obispo County Water Resource Advisory Committee (WRAC) is an advisory body whose members are appointed by the Board of Supervisors to review and submit recommendations on water resource projects and policies in the region. Each incorporated city, water-serving independent special district, resource conservation district, private water agency, state agency, and agricultural and environmental entity within the District is invited to participate on the WRAC. Currently, 24 local agencies and organizations are actively participating on the WRAC. For over 50 years, WRAC hearings have been the primary forum for the regional review of water resource issues and details.

San Luis Obispo Integrated Regional Water Management Plan

The San Luis Region's Integrated Regional Water Management Plan (IRWMP) integrates all of the programs, plans, and projects which relate to the region's water supply, water quality, ecosystem preservation and restoration, groundwater monitoring and management, and flood management. The District, in cooperation with the WRAC, has developed the IRWMP for the region coterminous with the county boundary. The IRWMP was adopted in 2005 and was

updated in July 2007. The IRWMP uses these areas as an organizing principle to identify strategies to integrate management of water resources that will result in the greatest benefit, for example, integrating groundwater recharge and ecosystem preservation and restoration with flood control and stormwater management projects to minimize impact of urbanization on water resources due to such activities as the replacement of the natural landscape with pavement and other impervious surfaces.

General Plan

The San Luis Obispo County General Plan includes water resource policies in the Land Use Element, the Agriculture and Open Space Element, and the Conservation Element. The Land Use Element outlines the objectives and procedures of the County's Resource Management System, which provides the policy framework to tie growth management to resource capacity, including water resource capacity. The 1974 Environment Plan and the 1998 Agriculture and Open Space Element included complementary policies which aim to encourage water conservation, groundwater recharge, and protection of riparian corridors on agricultural and open space lands. The Conservation Element is contained in the County's 1974 Environment Plan. Within the Conservation Element, the topics of water conservation, groundwater management, water resource development, water pollution control, stream, lake and marsh protection, and flood control are addressed. While the 1974 Conservation Element provides policy direction to protect the county's water resources, the policy recommendations did not hold up to the test of implementation. More specificity in policy language, paired with implementation recommendations, is needed to achieve water resource management goals.

This Conservation and Open Space Element supersedes the Environment Plan, including the Conservation Element, and the Open Space section of the former Agriculture and Open Space Element. The County's Resource Management System is addressed in the Water Demand and Consumption section of this appendix.

County Codes

The County's construction and building codes implement state building standards and in certain instances, exceed the state's minimum requirements to achieve water conservation in specific areas of the county.

Title 8

Title 8 requires retrofit of plumbing fixtures upon sale of residential, commercial and all other buildings in the Los Osos Groundwater Basin and the Nipomo Mesa Water Conservation Area. The intent is to reduce the amount of water being used by residential, commercial and other uses located in the Los Osos Groundwater Basin through retrofitting existing plumbing fixtures with low water consumption plumbing fixtures in existing homes, businesses and institutional buildings upon the sale of any such structure that uses water from the Los Osos Groundwater

Basin. All properties sold in Los Osos must replace older, high water-using toilets and showerheads with 1.28 or less gallons per flush (gpf) High Efficiency Toilets (HETs) and 2.5 or less gallon per minute (gpm) showerheads. Existing toilets rated at 1.6 gpf are exempt and may remain in the structure.

Title 19 Building and Construction

Title 19 requires new development in Los Osos to use low water consumption plumbing fixtures and requires new development to retrofit existing structures so that new development does not use “new” water. Prior to issuance of a construction permit for a new structure with plumbing fixtures that uses water from the Los Osos Groundwater Basin, the developer of such new structure shall retrofit plumbing fixtures in existing structures within the Los Osos Groundwater Basin. All new development in the Los Osos Groundwater Basin must retrofit enough existing homes and businesses to save twice the amount of water the new development would use, including installation of the following fixtures or mechanisms:

- a. Toilets rated at no more than 1.28 gallons per flush (HET);
- b. Showerheads rated at no more than 2.5 gallons per minute;
- c. Bathroom sink aerators with a volume of no more than 1.0 gallons per minute;
- d. Hot water circulation systems for master bathrooms and kitchens if the furthest plumbing fixture unit in these rooms is greater than twenty (20) pipe - feet from the hot water heater;
- e. Commercial structures shall use waterless urinals;
- f. New residences shall be plumbed for grey-water systems pursuant to Chapter 16 of the Uniform Plumbing Code.

Titles 22 and 23 – Land Use Ordinances (Inland and Coastal)

The county's land use ordinances include landscape installation and planting standards intended to provide areas which can absorb rainfall to assist in reducing storm water runoff, control erosion, preserve natural resources, promote, preserve and enhance native plant species, and recognize the need to use water resources as efficiently as possible. In addition, the goals of the standards are to:

- 1) Establish a procedure for designing, installing and maintaining water efficient landscapes; and
- 2) Establish provisions for water management practices and limit the waste of water; and
- 3) Educate and provide guidelines to property owners in choosing planting materials, efficient irrigation systems, soil management and appropriate maintenance to create landscapes that are both attractive and water conserving.

Existing Conditions

WATER SOURCES

San Luis Obispo County obtains nearly 80% of its water supply from groundwater. Only 2% of the county's supply comes from imported water and the remaining 17% of water supply is surface waters. The county's 30 groundwater basins include:

- Arroyo de la Cruz Valley
- Arroyo Grande Valley
- Big Spring Area
- Carrizo Plain
- Cayucos Valley
- Cholame Valley
- Chorro Valley
- Cuyama Valley
- Huasna Valley
- Los Osos Valley
- Morro Valley
- Old Valley
- Piedras Blancas Point
- Pismo Creek Valley
- Point Buchon
- Paso Robles Creek
- Pozo Valley
- Rafael Valley
- Rinconada Valley
- Salinas Valley- Paso Robles Sub-basin
- San Carpoforo Valley
- San Luis Obispo Valley
- San Simeon Point
- San Simeon Valley
- Santa Maria River Valley
- Santa Rosa Valley
- Tierra Redonda Mountain
- Toro Valley
- Villa Valley

In the late 1980s, a drought brought increased awareness of groundwater issues in the county. Due to a lack of surface water supplies at the time, the county was forced to rely more heavily on groundwater supplies, drawing attention to the risks associated with this choice of water supply, particularly in coastal areas. Many of the county's coastal communities are facing existing or potential seawater intrusion in their groundwater sources. This issue is particularly acute in the Los Osos Valley, Cambria, and the Nipomo area.

There are nine major watersheds fully or partially contained in San Luis Obispo County and twelve water planning areas (WPAs) in the county's 3,304 square miles. The water planning areas are:

- North Coast
- Cayucos
- Los Osos/Morro Bay
- San Luis Obispo/Avila
- Five Cities
- Nipomo Mesa
- Cuyama
- California Valley
- Salinas
- Creston
- Shandon
- Nacimiento

Additionally, the county is home to seven city wastewater service areas, nine community service districts (CSDs), six county service areas (CSAs), two sanitation districts, and 30 groundwater basins. Many of the county's communities have existing regulatory limits on growth, due to the limited water supply. The recent decision (2004) to implement the Nacimiento Water Project and to initiate the Nipomo Supplemental Water Project has greatly improved the ability of the county's water supply to meet projected demand over the next 20 years. At this point, the Nacimiento Water Project is under construction and working towards completion by 2010.

WATER QUALITY

Most of San Luis Obispo County's water quality is good and possibly better than many other areas of the state. However, the region also faces water quality challenges, such as wastewater compliance challenges, groundwater pollution from septic systems and other activities, and seawater intrusion. **Table A10-1** provides a summary of the county's water quality issues by Water Planning Area.

TABLE A10-1
QUALITY OF WATER RESOURCES

| Water Planning Area | Surface Source Water | Groundwater | Reclaimed | Imported | Desalted |
|---------------------|---|------------------------------------|---|---|---|
| North Coast | No 303(d) listed waterbodies | MTBE Chlorides | N/A | N/A | N/A |
| Cayucos | No 303(d) listed waterbodies | TDS Range (346-2,462 mg/L) | N/A | N/A | N/A |
| Los Osos/Morro Bay | Morro Bay, Los Osos Creek, and Chorro Creek are 303(d) listed for sediment, pathogens, and nutrients. Morro Bay is also listed for metals. Chumash Creek, Dairy Creek, and Warden Creek are listed for fecal coliform and low dissolved oxygen. Los Osos Creek is also listed for low dissolved oxygen. Pennington Creek, San Bernardo Creek, San Luisito Creek, and Walters Creek are listed for fecal coliform. | Seawater Intrusion | N/A | State Water Project (SWP) is the primary supply source for Morro Bay. | Morro Bay uses desalination as a backup supply source |
| SLO/Avila | San Luis Obispo Creek is 303(d) listed for pathogens, nutrients, and priority organics. | MTBE | City of SLO Dairy Creek Golf Course used for irrigation only. | Avila Beach has a SWP allocation for a secondary use. | N/A |
| Five Cities | No 303(d) listed waterbodies | MTBE Nitrate as NO ₃ | N/A | Pismo Beach has a SWP allocation for secondary use. | N/A |

| Water Planning Area | Surface Source Water | Groundwater | Reclaimed | Imported | Desalted |
|---------------------|---|---|-----------|----------|----------|
| Nipomo Mesa | Nipomo Creek is 303(d) listed for fecal coliform. Oso Flaco Creek is listed for fecal coliform and nitrate. Oso Flaco Lake is listed for nitrate. Santa Maria River is listed for fecal coliform and nitrate. | Nitrate as NO ₃ TDS Range (346-2,462 mg/L) | N/A | N/A | N/A |
| Cautama | No 303(d) listed waterbodies | TDS Range (206-3,905 mg/L) DWR notes a critical overdraft condition in Cuyama Basin. | N/A | N/A | N/A |
| California Valley | No 303(d) listed waterbodies | TDS (range not reported) Soda Lake Sub-basin useable mineral quality. | N/A | N/A | N/A |
| Salinas | The Salinas River is 303(d) listed for sodium and chloride. Atascadero Creek is 303(d) listed for fecal coliform and low dissolved oxygen. | TDS Range (165-3,868 mg/L) Chlorides Nitrate as NO ₃ MTBE | N/A | N/A | N/A |

| Water Planning Area | Surface Source Water | Groundwater | Reclaimed | Imported | Desalted |
|---------------------|---|--|-----------|-------------------------|----------|
| Creston | No 303(d) listed waterbodies | Increasing TDS and chlorides reported. | N/A | N/A | N/A |
| Shandon | Cholame Creek is 303(d) listed for boron. | Sulfate reported. Chlorides | N/A | SWP allocation not used | N/A |
| Nacimiento | Las Tablas Creek and Nacimiento Reservoir are 303(d) listed for metals. | | N/A | N/A | N/A |

Source: IRWMP 2007

Salinity and hardness are water quality issues which are most frequently encountered in the county. The most acute water quality issue may be found in the community of Los Osos, which has been subject to seawater intrusion for a number of years. The seawater intrusion has been estimated as migrating 100 feet per year, and the Los Osos CSD is currently studying and monitoring the intrusion and developing a management program.

Seawater intrusion in the coastal basin containing Grover Beach, Arroyo Grande, and Pismo Beach is currently covered by a 2002 agreement in which 220 acre-feet (AF) per year of basin yield is allocated for protection against intrusion. The Nipomo area has also been identified as at risk for seawater intrusion. Monitoring groundwater quality in select coastal wells in this area has occurred for the last several years. Additional water quality monitoring at coastal sites is necessary to fully understand the extent of saltwater intrusion in these areas.

Other water quality issues of concern in the county are sedimentation, nitrate contamination, heavy metal contamination, and oil contamination. In 2006, the County completed a Stormwater Management Plan in response to United States Environmental Protection Agency (EPA) requirements. While not technically a regional SWMP, the plan is coordinated with other local municipal efforts. The SWMP outlines existing issues and identifies Best Management Practices for stormwater. A Stormwater Management Program is currently under way, providing opportunities for water conservation at the countywide level.

WATER DELIVERY

Non-local water resources are transmitted to San Luis Obispo County via the Coastal Branch of the State Water Project. The transmission infrastructure is owned by the Department of Water Resources and is operated and maintained by the Central Coast Water Authority. Once inside the county, the water is distributed via County-operated infrastructure.

The County-operated water delivery system is overseen by County Public Works and is funded in part by various county service areas. Other water delivery operators include community service districts or private water companies.

In 2004, there were 170 public water systems serving 247,213 people in San Luis Obispo County. Of these systems, seven are considered large systems, serving a population of 10,001 to 100,000 people. The seven large systems in the county are:

- California Mens Colony
- Morro Bay Water Department
- San Luis Obispo Water Department
- Paso Robles Water Department

- Grover Beach Water Department
- Arroyo Grande Water Department
- Atascadero Mutual Water Company

Between 1979 and 1997, more than 9,000 domestic wells were constructed in San Luis Obispo County.

WATER DEMAND AND CONSUMPTION

Demand for water in the county in 2005 can be attributed to agriculture (58%), urban uses (32%), and other rural uses (13%). Table 4.2 shows existing supply, anticipated demand, and resulting balance or deficiency.

The San Luis County Department of Planning and Building administers a Resource Management System which evaluates demands and issues alert levels (Levels of Severity) to identify the level of projected resource deficiency. The three levels of severity for water supply are:

- *Level of Severity I:* When projected water demand over the next 9 years equals or exceeds the estimated dependable supply.
- *Level of Severity II:* When projected water demand over the next 7 years equals or exceeds the estimated dependable supply.
- *Level of Severity III:* When the existing water demand equals or exceeds the dependable supply.

The County is in the process of updating the Resource Management System alert levels. Recently, Los Osos and Nipomo Mesa have been certified as Level of Severity III. With this certification level, the County Board of Supervisors have directed County staff to address these alert levels in numerous ways, including implementing water conservation measures, exploring groundwater management ordinance development, and exploring restricting development until additional supplies are located. The Paso Robles area has recently been identified as Level of Severity I. Resource Capacity Studies (RCS) for Paso Robles and Santa Margarita are in progress at this time (November 2008).

Because the County currently has an excess of supply from their existing State Water Project contract, they are considering groundwater banking in the Paso Robles Groundwater Basin due to its proximity of the Paso Robles Groundwater Basin to the State Water Project infrastructure. Such activities may change the Resource Management System alert level of the Paso Robles area and other areas of the county in the future.

Nacimiento Water Project

Recent efforts to resolve water supply issues in San Luis Obispo County include the Nacimiento Water Project. The project will provide for the conveyance of 15,750 AF of water per year from the existing reservoir to communities. The pipeline will provide opportunities for future groundwater banking and conjunctive use programs through intersection with two other regional surface water supplies. Currently, only 61% of the water project's supply is under contract, leaving a remaining 39% for future needs.

TABLE A10-2
WATER SUPPLY VS. DEMAND BY WATER PLANNING AREA

| Water Planning Area | Supply (AF) | Demand (AF) | Balance (AF) [Deficiency] |
|---------------------|-------------|--|---------------------------|
| North Coast | 10,401 | Urban: 2,770 Agriculture: 540 Rural: 790 | 6,300 |
| Cayucos | 3,415 | Urban: 750 Agriculture: 820 Rural: 680 | 1,170 |
| Los Osos/Morro Bay | 8,962 | Urban: 6,930 Agriculture: 7,490 Rural: 780 | [6,240] |
| SLO/Avila | 13,973 | Urban: 14,490 Agriculture: 6,060 Rural: 1,100 | [7,680] |
| Five Cities | 19,997 | Urban: 11,990 Agriculture: 16,230 Rural: 3,940 | [12,160] |
| Nipomo Mesa | 41,300 | Urban: 5,030 Agriculture: 31,770 Rural: 5,940 | [1,440] |
| Cuyama | 8,000 | Urban: 0 Agriculture: 20,520 Rural: 490 | [13,010] |
| California Valley | 600 | Urban: 0 Agriculture: 210 Rural: 1,090 | [700] |

| Water Planning Area | Supply (AF) | Demand (AF) | Balance (AF) [Deficiency] |
|---------------------|-------------|--|---------------------------|
| Salinas | 51,693 | Urban: 41,120 Agriculture: 31,820 Rural: 7,440 | [28,690] |
| Creston | 48,263 | Urban: 0 Agriculture: 5,750 Rural: 6,230 | 36,280 |
| Shandon | 48,138 | Urban: 0 Agriculture: 27,190 Rural: 1,070 | 19,880 |
| Nacimiento | 1,200 | Urban: 0 Agriculture: 0 Rural: 3,020 | [1,820] |

Source: IRWMP, page B 40

Water Conservation

Water conservation efforts are under way in numerous communities such as Paso Robles, San Luis Obispo, Templeton, and Atascadero. These communities have joined together to form *Partners in Water Conservation*. Additionally, the cities of Morro Bay and San Luis Obispo have implemented tiered water rate structures which have greatly reduced water use. In 1990 the Board of Supervisors adopted a water policy prepared and recommended by the WRAC which envisioned implementation of greater water conservation programs and measures. A number of the county's water purveyors are already implementing some of these measures.

As part of County efforts to address Resource Management System alert levels in the Los Osos and Nipomo Mesa areas, the County is exploring the implementation of additional water conservation measures. These measures are focused on water retrofit programs for new development, remodels, and renovations aiming to increase water conservation over the long term.

Flood Control

The San Luis Obispo County Flood Control and Water Conservation District has recently completed studies for the communities of Cambria, Cayucos, Nipomo, Oceana, San Miguel, and Santa Margarita. These communities have been identified as critical areas for flood control. Flooding in these areas is primarily the result of lack of infrastructure, such as inadequate channel and culvert capacities, but is also attributable to loss and restriction of the floodplain due to development and high peak runoff.

STATE REGULATIONS AND POLICIES

California Water Rights

Surface Water Rights

Surface water rights are administered through the State Water Resources Control Board (SWRCB). Two main types of water rights exist in California law: riparian and appropriative.

Riparian Rights

Riparian water rights are associated with property adjacent to a watercourse. Owners of such properties are allowed to use naturally flowing water from the watercourse (i.e., not including any artificial or augmented flows) for reasonable and beneficial uses. The riparian right only applies to use of water from the watercourse on the portion of the subject property that drains to the watercourse in question, and riparian water rights cannot be stored or transferred off of this portion of the property. Lands severed from a riparian parcel (e.g., land subdivision) do not continue to have riparian rights. No permit is required from the SWRCB to establish or maintain a riparian water right; however, a Statement of Diversion is required to be reported to the SWRCB. This statement provides the water right holder with documented standing in disagreements regarding priorities and supply cutbacks during a shortage. Riparian rights are generally senior to appropriative rights (discussed below), and unlike an appropriative right, are not lost (forfeited) by non-use. Riparian right holders do not have priorities with respect to one another, and each holder has a right to a reasonable share of the total riparian water available.

Appropriative Rights

Appropriative rights are water rights granted for diversions (and transfers) of water to non-riparian land (lands not adjacent to a watercourse) for reasonable and beneficial uses, including storage. Appropriative rights are subject to a seniority system, commonly referred to as “first in time, first in right,” where the appropriative right holder with the longest standing right has first priority to water in a shortage. Appropriative water rights must be perfected (legitimized), and non-use results in loss of the appropriated right. There are two types of appropriative rights: pre-1914 and post-1914. Executive Order 11988 (*Floodplain Management*) addresses floodplain issues related to public safety, conservation, and economics. Riparian water rights are associated with property adjacent to a watercourse.

- Pre-1914 Appropriative Rights. California’s current permit system of appropriative water rights was established in 1914. Appropriative water rights established prior to 1914 are not subject to the permitting authority of the SWRCB, and hence do not need approvals from the SWRCB for transfers or changes in place or purpose of use. Changes in the point of diversion, however, remain subject to SWRCB approval.
- Post-1914 Appropriative Rights. Since 1914, appropriative rights have been subject to the permitting authority of the state. Today, SWRCB issues and administers these

permits, which specify the quantity, place, and purpose of use, as well as the point of diversion. SWRCB approval is required for any changes to the above, as well as for water transfers, and the agency may attach conditions to its permits and approvals to protect other water rights holders and public trust resources (e.g., fish and wildlife).

Dam Safety and Operation

Dam safety in California is administered by the Department of Water Resources, Division of Safety of Dams (DSOD). DSOD reviews plans and specifications for the construction of new dams or for the enlargement, alteration, repair, or removal of existing dams, as well as performs inspections during dam construction and operation. A water rights permit from the SWRCB is required prior to filing an application to the DSOD to construct a dam.

Groundwater Rights

Groundwater rights in California are similar to surface water rights; however, no permit system or comprehensive regulatory method exists. The exception is groundwater deemed to be part of a subterranean stream or underflow that is hydraulically connected to a surface water body. In such cases, the source is classified as surface water and remains subject to the permitting authority of the SWRCB. Groundwater law is primarily expressed through previous legal decisions, and disputes among groundwater users are usually settled through judicial actions or adjudications. There are two main types of groundwater rights: overlying and appropriative.

Overlying Rights

Overlying rights apply to parcels that overlie a groundwater basin. Overlying rights are analogous to riparian rights for surface water. Overlying users do not have priorities with respect to one another, and each holder has a right to a reasonable share of the total groundwater supply available. Overlying rights may be active or dormant and are generally senior to appropriative rights (defined below). Note that water devoted to public uses (e.g., municipal water supply systems) is considered in most cases to be an appropriative use, rather than an overlying use, regardless of the location of the water use with respect to the aquifer.

Appropriative Rights

Appropriative rights apply to groundwater extractions used on lands that do not overlie the aquifer in question. Appropriate rights are analogous to appropriative rights for surface water. Appropriative rights are protected by the construction and use of a well, and putting the pumped water to reasonable and beneficial use. These rights are subject to a seniority system, where the appropriative right holder with the longest standing right has first priority to groundwater in a condition of shortage.

Groundwater Quality

Groundwater quality is regulated through the federal Clean Water Act and State Porter-Cologne Act and administered by the U.S. Environmental Protection Agency, the SWRCB, and local Regional Water Quality Control Boards (RWQCBs). The RWQCBs and California Department of Health Services administer standards for installation, use, and abandonment of wells and septic systems to ensure that drinking water standards and other water quality criteria are met and beneficial uses of the aquifer are maintained.

Relevant State Legislation

SB 221 (Kuehl, Chapter 642, Statutes of 2001)—Certification of Sufficient Water Supply

Senate Bill 221 requires local agencies to provide written verification that sufficient water supply is available before approving plans for new development.

SB 610 (Costa, Chapter 643, Statutes of 2001)—Water Supply Planning

Senate Bill 610 requires additional information to be included as part of an urban water management plan if groundwater is identified as a source of water available to the supplier. It requires an urban water supplier to include in the plan a description of all water supply projects and programs that may be undertaken to meet total projected water use. In response to SB 221 and SB 610, DWR prepared *The State Water Project Delivery Reliability Report* to assist the SWP contractors in assessment of the adequacy of the SWP component of their overall water supplies. DWR has also published a guidebook on how cities and counties can comply with Senate Bills 221 and 610.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, passed in 1969, articulates the federal CWA (see “Clean Water Act” in the Federal Regulations section) for California. It established the SWRCB and divided the state into nine regions, each overseen by an RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state’s surface and groundwater supplies, but much of its daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA Sections 401, 402, and 303(d). In general, the SWRCB manages statewide regulation of water quality, while the RWQCBs focus exclusively on water quality within their regions. San Luis Obispo County is in Region 3, which is administered by the Central Coast Regional Water Quality Control Board.

Basin Plans and Water Quality Objectives

The Porter-Cologne Act provides for the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California’s major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons

why the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Basin plans are primarily implemented by using the National Pollution Discharge Elimination System (NPDES) permitting system and the issuance of waste discharge requirements (WDRs) to regulate waste discharges so that water quality objectives are met (see discussion of the NPDES system in the “Clean Water Act” section in the Federal Regulations section. Basin plans are updated every 3 years and provide the technical basis for determining waste discharge requirements and taking regulatory enforcement actions if deemed necessary.

Site-Specific Water Quality Objectives

Due to site-specific variations in water chemistry, the toxicity of a contaminant to aquatic life may deviate from adopted water quality objectives in a particular water body. As a result, various water bodies may require more or less protection to achieve optimal water quality. For this reason, the SWRCB and EPA allow site-specific water quality objectives. At this time in California, the only way to obtain a site-specific water quality objective is through an amendment to the relevant basin plan. Site-specific water quality objectives adjust the adopted water quality objective to account for over- or under-protectiveness based on site-specific information and federal and state scientific guidance. Three EPA-published procedures and a number of other procedures allowed by EPA can be used to establish these site-specific objectives. Of these procedures, the most common is the Water-Effect Ratio (WER) Procedure (U.S. Environmental Protection Agency 1994, 2001), which adjusts objectives to account for a site’s water chemistry. The WER is the ratio of the toxicity of a chemical in site water to the chemical’s toxicity in laboratory water, based on established standards for lab water.

As mentioned above, site-specific water quality objectives may be granted through the basin plan amendment process, which tends to be a time-consuming proposition. The SWRCB is currently considering whether to extend this authority to individual NPDES permits. In either case, a process exists whereby a site-specific water quality objective may be sought to allow for a higher discharge limit than would otherwise be possible.

Waste Discharge Requirements

It is the responsibility of the Water Boards to preserve and enhance the quality of the state’s waters through the development of water quality control plans and the issuance of waste discharge requirements. The Porter-Cologne Act provides for the issuance of WDRs. This requirement is very similar to the NPDES program under the federal Clean Water Act (CWA), and in most cases, the two processes are combined by the RWQCBs. However, the Porter-Cologne Act definition of discharge is somewhat broader than the CWA; in addition, waters of the state include certain water bodies that are not waters of the United States. As a result, certain discharges are solely regulated under the Porter-Cologne Act. The SWRCB has adopted

general WDRs for land application of biosolids, discharges to isolated wetlands, and land discharge of groundwater or surface water from cleanup of petroleum pollution.

The SWRCB establishes policies and regulations that help protect and restore the water quality in California, coordinates with and supports Regional Water Board efforts, and reviews Regional Water Board actions. The RWQCBs monitor and enforce state and federal plans, policies, and regulations. Each Regional Water Board makes critical water quality decisions for its region. In addition to issuing WDRs, these decisions include setting standards, determining compliance with WDRs, and taking appropriate enforcement actions.

The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits:

- **General Construction Permit.** Most construction projects that disturb 1 acre of land or more are required to obtain coverage through an NPDES General Permit for Construction Activities (General Construction Permit), which requires the applicant to file a public notice of intent (NOI) to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities, along with demonstration of compliance with relevant local ordinances and regulations, and an overview of the best management practices (BMPs) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. The permit holder is further required to conduct monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.
- **General Caltrans Permit.** Projects constructed in California Department of Transportation (Caltrans) facilities or rights-of-way must comply with the requirements of Caltrans' statewide NPDES permit, which has requirements similar to those of the General Construction Permit.
- **General Industrial Permit.** Stormwater discharges from industrial facilities are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Associated with Industrial Activities excluding Construction Activities (General Industrial Permit). The regulations defining discharges of stormwater associated with industrial activities identify 11 categories of industrial activities that require permit coverage. Authorization for continued and future stormwater discharge under the General Industrial Permit requires each facility operator to submit an NOI. All stormwater discharges from industrial sites must meet all applicable provisions of Sections 301 and 402 of CWA.

For example, discharges from an industrial site must not cause or contribute to a violation of any applicable water quality standards, which include all federal receiving water standards and all state standards under the region's basin plan, the guiding policy document adopted by the governing RWQCB and approved by the SWRCB. These provisions require control of pollutant discharges using the best available technology (BAT) that is economically achievable and the best conventional pollutant control technology (BCT) to prevent and reduce pollutants and to meet CWA water quality standards. The General Industrial Permit generally requires facility operators to do the following:

- Eliminate unauthorized non-stormwater discharges.
- Develop, retain on site, and implement a SWPPP to identify sources of pollution and to prescribe BMPs to reduce or prevent pollutant discharges and authorized non-stormwater discharges.
- Perform monitoring of stormwater discharges and authorized non-stormwater discharges from industrial facilities (e.g., storm drains leaving the facility).

Areas of industrial activity where surface runoff must be controlled and treated include all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust- or particulate-generating areas, cleaning and rinsing areas, and all other areas of industrial activity that are potential pollutant sources. Any changes to the industrial site or activity require an update of the SWPPP and may necessitate the implementation of new control measures.

Other General Permits

The SWRCB has adopted several other general permits under the NPDES program, including permits for the discharges of aquatic pesticides for vector and aquatic weed control.

Municipal Stormwater Permits

The Municipal Storm Water Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). MS4 permits were issued in two phases. Under Phase I, which started in 1990, the Regional Water Quality Control Boards have adopted NPDES General Permit stormwater permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. These permits are reissued as the permits expire. As part of Phase II, the State Water Resources Control Board adopted a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities, including non-traditional small

MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

The MS4 permits require the discharger to develop and implement a Storm Water Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the Clean Water Act. The management programs specify what best management practices will be used to address certain program areas. The program areas include public education and outreach, illicit discharge detection and elimination, construction and post-construction, and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

Individual NPDES Permits

All point source discharges to waters of the United States not covered by a general permit are required to apply for an individual NPDES permit with the RWQCB. The RWQCB then issues waste discharge requirements and monitoring provisions to ensure compliance with CWA standards.

Considerations in Granting NPDES Permits

Under the NPDES permit process, the SWRCB or RWQCB has the authority to identify mixing zones and grant corresponding dilution credits in establishing and determining compliance with effluent limitations. A *mixing zone* is an area of the receiving water within which water quality criteria may be exceeded, as long as the criteria are met at the boundary of the mixing zone. A *dilution credit* may be granted when the receiving water has a substantial volume of water with which to dilute the effluent. It is expressed as a ratio of receiving water to effluent (for example, 20:1, or 20 parts receiving water to 1 part effluent) and effectively reduces the concentration of contaminants when determining whether water quality criteria can be met.

The allowance of mixing zones and dilution credits is discretionary and is determined on a case-by-case basis. Factors considered include variations in the receiving water flow or volume, aquatic toxicity, and human health criteria and objectives. Mixing zones may not be allowed at or near any drinking water intake and are prohibited from the following activities, although other limitations may also apply.

- Compromising the integrity of the entire water body.
- Causing acutely toxic conditions to aquatic life passing through the mixing zone or restricting the passage of aquatic life.
- Producing objectionable color, odor, taste, or turbidity.
- Dominating the receiving water body.

The RWQCB or SWRCB will deny or limit a mixing zone and dilution credit as necessary to protect the beneficial use of state waters.

Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California

The State Implementation Program (SIP) (State Water Resources Control Board 2000) established new standards for a variety of toxic pollutants. This state policy for water quality control applies to discharges of toxic pollutants into California's inland surface waters, enclosed bays, and estuaries, subject to regulation under the Porter-Cologne Act and the federal CWA. Such regulation may occur through the issuance of NPDES permits, the issuance or waiver of WDRs, or other regulatory approaches.

The goal of the SIP is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency. The SIP is a tool to be used in conjunction with watershed management approaches and, where appropriate, the development of TMDLs to ensure that water quality standards are met and the beneficial uses are protected.

The SIP establishes implementation provisions for priority pollutant criteria promulgated by the EPA through the National Toxics Rule and the California Toxics Rule (CTR), and for priority pollutant objectives established by the RWQCBs in their respective basin plans. The CTR promulgates the following criteria:

- Ambient aquatic life criteria for 23 priority toxics.
- Ambient human health criteria for 57 priority toxics.
- A compliance schedule provision that authorizes the state to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

The state must use these criteria together with the state's existing water quality standards when controlling pollution in inland surface waters, enclosed bays, and estuaries. California's RWQCBs are currently considering whether to include CTR standards in their basin plans as a streamlining measure.

Drinking Water Standards

Title 22 of the California Code of Regulations (CCR) outlines drinking water standards in the State of California. Maximum contaminant levels (MCLs) for various contaminants are identified and are made enforceable regulatory standards under the federal Safe Drinking Water Act. MCL standards must be met by all public drinking water systems to which they apply. Primary MCLs can be found in 22 CCR Sections 64431–64444. Specific regulations for lead and copper are in

22 CCR Section 64670 et seq. Secondary MCLs that address the taste, odor, and appearance of drinking water are found in 22 CCR Section 64449. Site-specific water quality objectives adjust the adopted water quality objective to account for over- or under-protectiveness based on site-specific information and federal and state scientific guidance.

Reclaimed Water Standards

Title 22 of the California Code of Regulations (CCR) outlines reclaimed water standards in the State of California, and reclaimed water is primarily regulated by the California Department of Health Services (DHS), in coordination with the RWQCBs. DHS has produced *The Purple Book*, which contains California health laws related to reuse of disinfected tertiary recycled water. Disinfected tertiary recycled water is defined as filtered and subsequently disinfected wastewater that exhibits extremely low levels of coliform bacteria and turbidity. The following are allowable uses for disinfected tertiary recycled water:

- Food crops, including all edible root crops, where the recycled water encounters the edible portion of the crop.
- Parks and playgrounds, schoolyards, residential landscaping, and unrestricted access golf courses.
- Industrial cooling that involves the use of a cooling tower.
- Flushing toilets and urinals, priming drain traps, industrial process water that may come into contact with workers, structural firefighting, decorative fountains, commercial laundries, consolidation of backfill around potable water pipelines, car washes.
- Any other irrigation use not prohibited.

The following limitations and requirements apply:

- Irrigation within 50 feet of any domestic water supply well is prohibited unless certain conditions are met.
- Surface impoundments of tertiary treated disinfected effluent within 100 feet of any domestic water supply well are prohibited.
- All irrigation runoff shall be confined to the recycled water use area, unless the runoff does not pose a public health threat and is authorized by the regulatory agency.
- Spray, mist, or runoff from reuse shall not contaminate dwellings, outdoor eating areas, food handling facilities, and drinking water fountains.
- No cross connections with domestic water systems are allowed. Proposed irrigation systems utilizing wastewater must be entirely separate from irrigation systems using domestic supplies, and all pipes used for water recycling must be colored purple or

utilize another marking system that clearly distinguishes recycled water from potable water.

- Disinfected tertiary recycled water shall be sampled at least once daily for total coliform and continuously for turbidity using a continuous turbidity meter.
- All use areas where recycled water is used that are accessible to the public shall be posted with signs that indicate that recycled water is in use.
- Backflow prevention devices are required such that effluent does not reach potable supplies or otherwise expose humans.

Disinfected tertiary treated effluent may be used for groundwater recharge of domestic water supply aquifers by surface spreading provided the effluent is of a quality that fully protects human health at all times. For groundwater recharge projects, DHS make recommendations to the RWQCB based on the relevant aspects of the project, including effluent quality and quantity, spreading area operations, soil characteristics, hydrogeology, residence time, and distance to withdrawal.

California Fish and Game Code Sections 1601–1607

Under Sections 1601–1607 of the California Fish and Game Code, the California Department of Fish and Game (DFG) regulates projects that affect the flow, channel, or banks of rivers, streams, and lakes. Sections 1601 and 1603 require public agencies and private individuals, respectively, to notify and enter into a streambed or lakebed alteration agreement with DFG before beginning construction of a project that will have either of the following results:

- Divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake.
- Use materials from a streambed. Section 1601 contains addition prohibitions against the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake.

Sections 1601–1607 may apply to any work undertaken within the 100-year floodplain of any body of water or its tributaries, including intermittent stream channels. In general, however, it is construed as applying to work within the active floodplain and/or associated riparian habitat of a wash, stream, or lake that provides benefit to fish and wildlife. Sections 1601–1607 typically do not apply to drainages that lack a defined bed and banks, such as swales, or to very small bodies of water and wetlands such as vernal pools.

General Plan Guidelines (2003)

The 2003 General Plan Guidelines for the State of California provide requirements for the elements in the General Plan. Water resources are included in the requirements for

conservation elements. The term *water resources* must be clarified and the following topics are to be addressed:

- Water supply/conservation regarding water management plans and coordinated land use planning,
- Water quality/impaired water bodies,
- Water and its hydraulic force,
- Rivers and other waters,
- Harbors (please note that this is oriented toward public access and transportation of goods/services and is covered in the Local Coastal Program).

State Regulation of Groundwater

California water law does not provide a mandate for comprehensive groundwater management, nor does it provide a regulatory process for groundwater withdrawals. None of San Luis Obispo County's groundwater basins are currently regulated under groundwater ordinances, although there is potential for future management.

FEDERAL REGULATIONS AND POLICIES

Federal water policy is implemented by numerous agencies, including the Environmental Protection Agency, the Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Bureau of Reclamation, the Federal Emergency Management Agency, and the Department of Interior.

Safe Drinking Water Act (SDWA)

Congress passed the Safe Drinking Water Act (SDWA) in 1974 to protect public health by regulating the nation's public drinking water supply. Congress amended the law in 1986 and 1996 and required many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. (SDWA does not regulate private wells that serve fewer than 25 individuals.) SDWA authorizes the United States Environmental Protection Agency (EPA) to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. EPA, states, and water systems then work together to make sure that these standards are met. Originally, SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. This approach ensures the quality of drinking water by protecting it from source to tap. SDWA applies to every public water system in the United States.

Groundwater

There are no applicable federal policies regulating groundwater in San Luis Obispo County. In California, the State Regional Water Quality Control Boards set beneficial uses and water quality objectives for groundwater, usually consistent with Title 22 of the California drinking water standards.

Floodplains

Federal Flood Insurance Program

Congress, alarmed by increasing costs of disaster relief, passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts is to reduce the need for large publicly funded flood control structures and disaster relief by restricting development on floodplains. The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development on floodplains. FEMA issues Flood Insurance Rate Maps (FIRMs) for communities participating in the NFIP. FIRMs delineate flood hazard zones in the community.

Executive Order 11988

Executive Order 11988 (*Floodplain Management*) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding a project in a floodplain to do the following:

- Avoid incompatible floodplain development.
- Be consistent with the standards and criteria of the NFIP.
- Restore and preserve natural and beneficial floodplain values.

Surface Water

U.S. Bureau of Reclamation

The U.S. Bureau of Reclamation is a water management agency established in 1902 to manage water in the western United States. The Bureau of Reclamation is primarily known for the role it has played in dam building and hydroelectric power generation. The Bureau of Reclamation is the largest water wholesaler in the country, serving 31 million people. San Luis Obispo County is located in the Bureau of Reclamation's Mid-Pacific Region.

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It operates on the principle that all pollutant discharges into the nation's waters are unlawful unless specifically authorized by a

permit; permit review is the CWA's primary regulatory tool. The following paragraphs provide additional detail on specific sections of the CWA.

CWA Permits for Fill Placement in Waters and Wetlands

CWA Section 404 regulates the discharge of dredged and fill materials into "waters of the United States," which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. A definition of waters of the United States as relevant to San Luis Obispo County includes the following:

- Navigable waters which are waters currently used, used in the past, or potentially used for interstate or foreign commerce, as well as waters for which the use, degradation, or destruction could affect interstate or foreign commerce;
- All tidally influenced waters; and
- Tributaries to, and adjacent wetlands of, the above two categories.

In general, most intermittent and perennial water bodies are considered waters of the United States unless they are isolated (e.g., vernal pools). Project proponents must obtain a permit from the United States Army Corp of Engineers (Corps) for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Before any actions are carried out, a delineation of waters of the United States must be completed, following Corps protocols (Environmental Laboratory 1987), to determine whether the project area encompasses wetlands or other waters of the United States that qualify for protection under the CWA. These waters may include areas within the ordinary high water mark of a stream, including non-perennial streams (streams that do not flow year-round) with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned or modified.

Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3, 40 CFR 230.3). The Corps provides authorization through regional and nationwide general permits and individual permits, depending on project size and characteristics. Individual Section 404 permits may only be issued for the least environmentally damaging practicable project alternative. That is, authorization of a proposed discharge is prohibited if there is a more practicable alternative that would have less adverse impacts and lacks other significant adverse consequences. Wetlands are areas inundated or saturated by surface or ground water often enough to support wetland vegetation.

CWA Water Quality Certification

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate, or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. All projects that have a federal component and may affect the quality of the state's waters (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

CWA Permits for Point and Nonpoint Source Discharges

As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. In most cases, the NPDES permit program is administered by authorized states. In California, the State Water Resources Control Board is authorized by the EPA to oversee the NPDES program through the RWQCBs (see related discussion under "Porter-Cologne Water Quality Control Act" above). The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters.

Total Maximum Daily Loads

Under CWA Section 303(d) and California's Porter-Cologne Water Quality Control Act of 1969 (discussed above), the State of California is required to establish beneficial uses of state waters and to adopt water quality standards to protect those beneficial uses. Section 303(d) establishes the Total Maximum Daily Load (TMDL) process to assist in guiding the application of state water quality standards, requiring the states to identify waters whose water quality is "impaired" (affected by the presence of pollutants or contaminants) and to establish a TMDL or the maximum quantity of a particular contaminant that a waterbody can assimilate without experiencing adverse effects on the beneficial use identified. TMDLs are generally stakeholder driven processes that involve investigation of sources and their loading (pollution input), make load allocations, and identify an implementation plan and schedule.

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